

Abstract Submitted  
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**Short-Range Resonating Valence-Bond Theory and “Hard Dimer”** DOUGLAS KLEIN, Texas A&M University at Galveston — The structure of resonating valence-bond (RVB) wave-functions with singlet-spin-pairing limited to nearest neighbor sites is considered. It is noted that these basis states manifest a type of long-range spin-pairing order, from which it follows that in general extended systems the space so spanned is partitioned into different sectors, which in a very general context are non-interacting. So-called “hard dimer” models are defined on this RVB space, and some are solved exactly. Special attention is directed to the honeycomb lattice and subsets thereof, such as is of central interest in classical areas of (organic) chemistry.

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